What is claimed is:

1. A method for detecting a compound of interest in a sample comprising the steps of:

a) providing a binding construct comprising a recognition portion which recognizes and binds said compound of interest, and a nucleic acid portion;
b) mixing said binding construct with said sample to form construct-compound complexes;
c) providing one or more surfaces, wherein said surface bears one or more accessible binding targets capable of recognizing and binding to said recognition portion of said binding construct;
d) introducing said one or more surfaces to said mixture of said binding construct and said sample in order for said one or more surfaces to form construct-surface complexes with any unbound binding constructs;
e) separating said construct-surface complexes from said mixture leaving behind said construct-compound complexes;
f) detecting the presence or absence of said nucleic acid portion of said binding construct;

wherein the presence of said nucleic acid portion of said binding construct indicates the presence of said compound of interest in said sample.

2. The method of claim 1, wherein said one or more surfaces is selected from the group consisting of: particles, powders, beads, planar surfaces, non-planar surfaces, a tube, a well, non-porous films, non-porous membranes, porous films, porous membranes, fibers, fillers, meshes, grids, filters, matrices, gels, and combinations thereof.

3. The method of claim 1, wherein said one or more surfaces comprises particles.

4. The method of claim 3, wherein said particles comprise magnetic particles.

5. The method of claim 4, wherein said step (e) comprises separating said construct-surface complexes out of said mixture by means of a magnet.

6. The method of claim 1, wherein, in step (f), said detecting the presence or absence of said nucleic acid portion of said binding construct comprises amplification of said nucleic acid portion, hybridization of said nucleic acid portion, enzymatic amplification, detection of a label, or a combination thereof.

7. The method of claim 1, wherein, in step (f), said detecting the presence or absence of said nucleic acid portion of said binding construct comprises amplification of said nucleic acid portion.

7. The method of claim 7, wherein said amplification of said nucleic acid portion comprises a polymerase chain reaction.

8. The method of claim 5, wherein, in step (f), said detecting the presence or absence of said nucleic acid portion of said binding construct comprises amplification of said nucleic acid portion, hybridization of said nucleic acid portion, enzymatic amplification, detection of a label, or a combination thereof.

9. The method of claim 5, wherein, in step (f), said detecting the presence or absence of said nucleic acid portion of said binding construct comprises amplification of said nucleic acid portion.

10. The method of claim 9, wherein said amplification of said nucleic acid portion comprises a polymerase chain reaction.

11. The method of claim 1, wherein said recognition portion comprises a receptor.

12. The method of claim 1, wherein said recognition portion comprises an antigen.

13. The method of claim 1, wherein said recognition portion comprises an antibody or an antibody fragment.

14. The method of claim 1, wherein said recognition portion comprises a single chain antibody variable region fragment.

15. The method of claim 1, wherein said recognition portion comprises a Fab fragment.

16. The method of claim 15, wherein said Fab fragment is attached to said nucleic acid portion through the free sulfhydryl of the Fab fragment.

17. The method of claim 12 wherein said compound of interest comprises an antibody or antibody fragment, said recognition portion of said binding construct comprises an antigen that is recognized by said compound of interest, and said accessible binding targets comprise an antibody or antibody fragment that is capable of recognizing and binding to said recognition portion of said binding construct.

18. The method of claim 1, wherein said nucleic acid portion comprises DNA.

19. The method of claim 1, wherein said nucleic acid portion comprises RNA.

20. The method of claim 1, wherein said nucleic acid portion comprises a nucleic sequence that does not include a sequence that is expected to be found in the sample.

21. The method of claim 1, wherein said step (a) comprises providing two or more different types of binding constructs, wherein each of said two or more different binding constructs has a different recognition portion and a different nucleic acid portion.

22. A method for increasing the sensitivity of solution-phase detection of a compound of interest, comprising the steps of:

a) providing a sample suspected of containing said compound of interest;

b) providing a binding construct comprising:

i) a recognition portion capable of binding said compound of interest, and

ii) a nucleic acid portion

c) contacting said sample with said binding construct for a period of time sufficient to permit said recognition portion to bind said compound of interest present in said sample, thereby forming construct-compound complexes in solution;

d) providing one or more surface, wherein said one or more surfaces bears one or more accessible binding target capable of binding to said recognition portion;

e) contacting said one or more surfaces with said solution for a period of time sufficient for said one or more accessible binding target to bind said recognition portion of any binding construct not bound to said compound of interest, thereby forming construct-surface complexes;

f) separating said construct-surface complexes from said solution, leaving said construct-compound complexes in said solution; and

g) detecting the presence or absence of said nucleic acid portion of said binding construct in said solution,

wherein said separation of said construct-surface complexes from said solution results in a separation of substantially all binding constructs not bound to a compound of interest and in an increased sensitivity of detection of said compound of interest, and

wherein the presence of said nucleic acid portion of said binding construct indicates the presence of said compound of interest in said sample.

23. The method of claim 22, wherein said one or more surfaces is selected from the group consisting of: particles, powders, beads, planar surfaces, non-planar surfaces, a tube, a well, non-porous films, non-porous membranes, porous films, porous membranes, fibers, fillers, meshes, grids, filters, matrices, gels, and combinations thereof.

24. The method of claim 22, wherein said one or more surfaces comprises particles.

25. The method of claim 24, wherein said particles comprise magnetic particles.

26. The method of claim 25, wherein said step (f) comprises separating substantially all said construct-surface complexes from said solution by means of a magnet.

27. The method of claim 22, wherein, in step (g), said detecting the presence or absence of said nucleic acid portion of said binding construct comprises amplification of said nucleic acid portion, hybridization of said nucleic acid portion, enzymatic amplification, detection of a label, or a combination thereof.

28. The method of claim 22, wherein, in step (g), said detecting the presence or absence of said nucleic acid portion of said binding construct comprises amplification of said nucleic acid portion.

29. The method of claim 28, wherein said amplification of said nucleic acid portion comprises a polymerase chain reaction.

30. The method of claim 26, wherein, in step (g), said detecting the presence or absence of said nucleic acid portion of said binding construct comprises amplification of said nucleic acid portion, hybridization of said nucleic acid portion, enzymatic amplification, detection of a label, or a combination thereof.

31. The method of claim 26, wherein, in step (g), said detecting the presence or absence of said nucleic acid portion of said binding construct comprises amplification of said nucleic acid portion.

32. The method of claim 31, wherein said amplification of said nucleic acid portion comprises a polymerase chain reaction.

33. The method of claim 22, wherein said recognition portion comprises a receptor.

34. The method of claim 22, wherein said recognition portion comprises an antigen.

35. The method of claim 22, wherein said recognition portion comprises an antibody or antibody fragment.

36. The method of claim 22, wherein said recognition portion comprises a single chain antibody variable region fragment.

37. The method of claim 22, wherein said recognition portion comprises a Fab fragment.

38. The method of claim 37, wherein said Fab fragment is attached to said nucleic acid portion through the free sulfhydryl of the Fab fragment.

39. The method of claim 34, wherein said compound of interest comprises an antibody or antibody fragment, said recognition portion of said binding construct comprises an antigen that is recognized by said compound of interest, and said accessible binding targets comprise an antibody or antibody fragment that is capable of recognizing and binding to said recognition portion of said binding construct.

38. The method of claim 21, wherein said nucleic acid portion comprises DNA.

39. The method of claim 21, wherein said nucleic acid portion comprises RNA.

40. The method of claim 21, wherein said nucleic acid portion comprises a nucleic sequence that does not include a sequence that is expected to be found in the sample.

41. The method of claim 21, wherein said step (b) comprises providing two or more different types of binding constructs, wherein each of said two or more different binding constructs has a different recognition portion and a different nucleic acid portion.

42. A kit for detecting a compound of interest in a sample suspected of containing said compound of interest comprising:

a) a binding construct comprising

(i) a recognition portion which recognizes and binds said compound of interest, and

(ii) a nucleic acid portion;

and

b) one or more surfaces bearing one or more accessible binding targets capable of binding to said recognition portion of said binding construct.

43. The kit of claim 42, further comprising a nucleic acid amplification primer pair, wherein each primer of said primer pair is capable of hybridizing to its complementary sequence at the 3' end of a target nucleic acid sequence of said nucleic acid portion.